Fig. 1

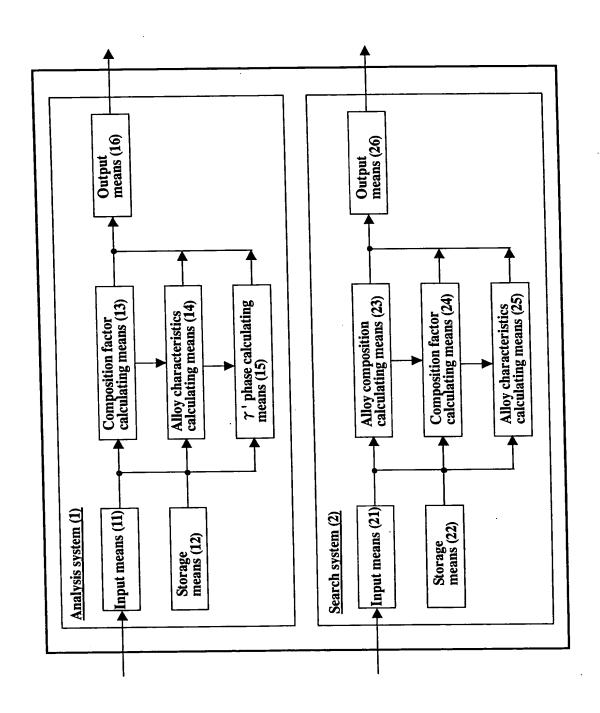


Fig. 2

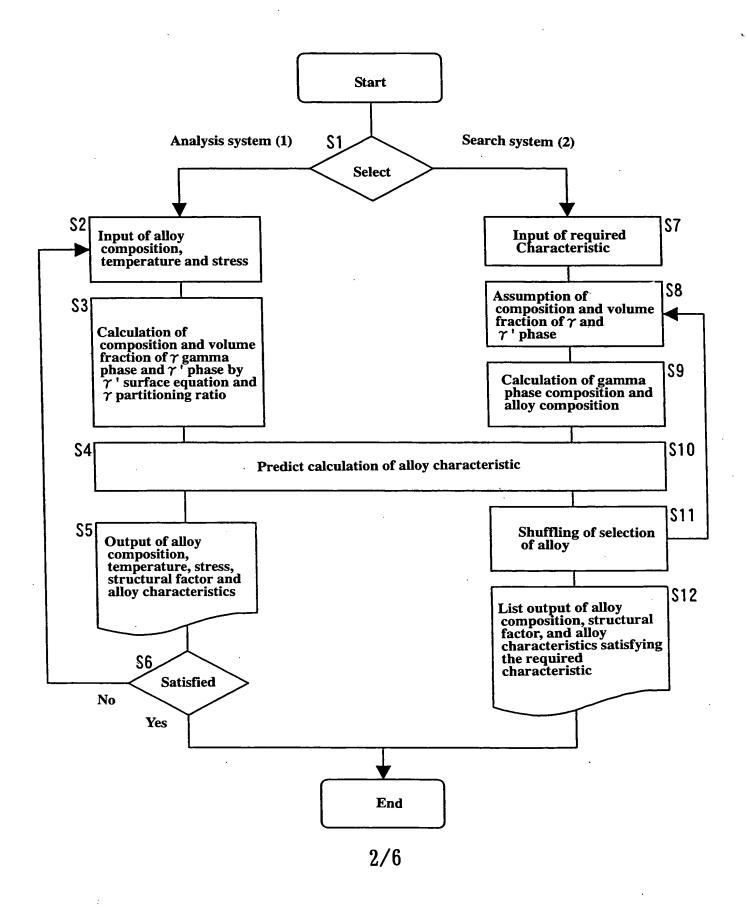
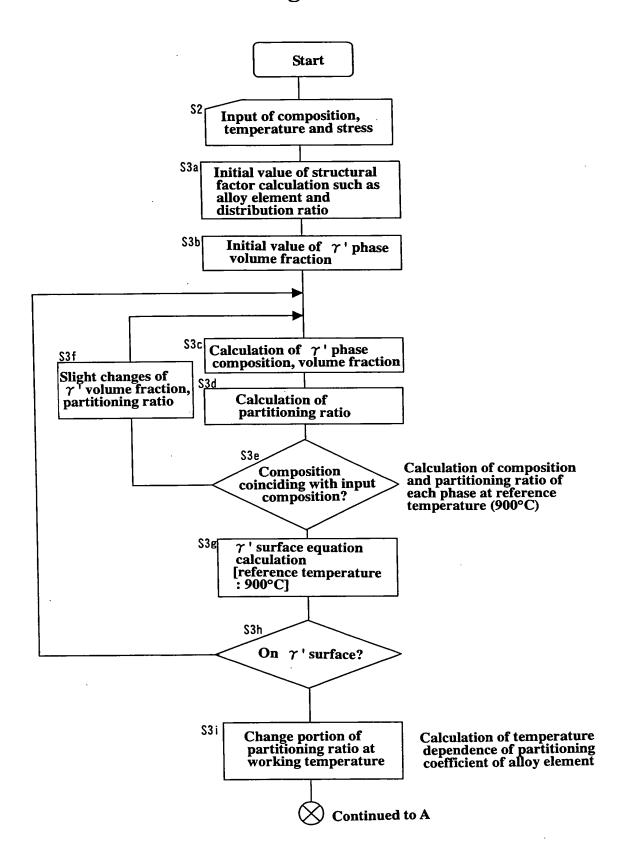


Fig. 3



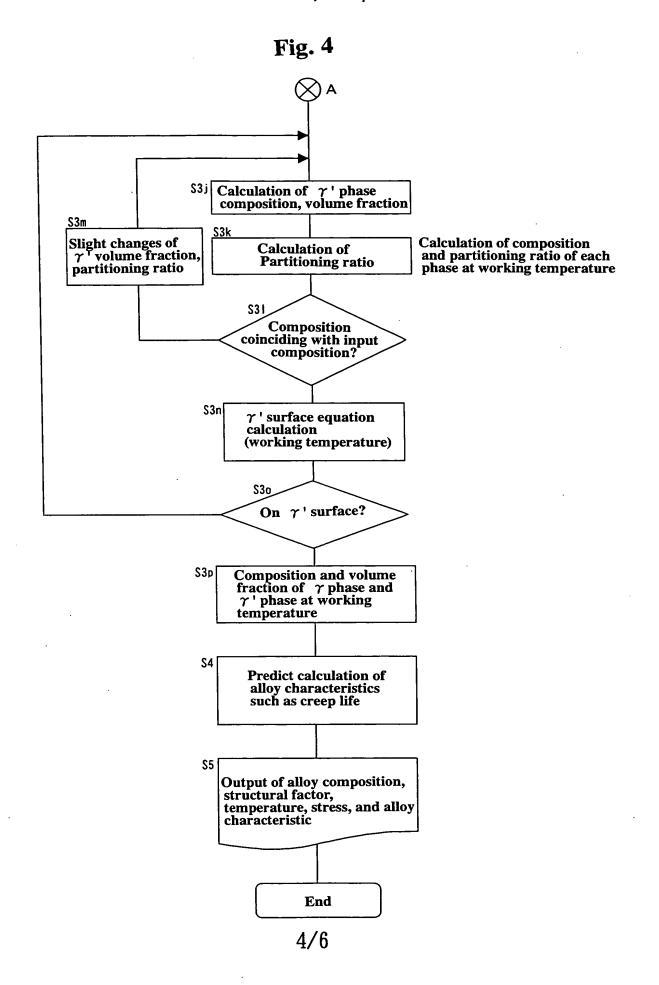


Fig. 5

```
ALLOY TMS-138 *** Phase & Properties Calculation (at 1100. C/ 137. OMPa ***PGM*
                  Co
                       Cr
                             Mo
                                         Αl
            Νi
    (WT%) 63. 60 5. 88 2. 94 2. 94
                                  5. 88 5. 88 0. 00
                           1. 92 2. 00 13. 62 0. 00
    (AT%) 67. 74 6. 24 3. 54
          68. 04 4. 51
                       2. 22
                            1. 00 1. 80 18. 12
                                              0. 00
    GP
                            3. 57
                                  2. 33
                                        4. 52 0. 00
          64. 54 10. 83
                       7. 14
     G
            Ta
                  Hf
                        Re
                              l r
                                    Ru
                                          Rh
                                               Pd
                                                     Pt
                      4. 90
                            0.00 2.00
                                         0.00 0.00
    (WT%)
           5. 88 0. 10
           2. 03 0. 04
                     1. 65
                             0.00 1.24
                                         0.00 0.00
    (AT%)
                            0.00 0.92 0.00 0.00 0.00
           2. 77
                 0. 05 0. 58
     GP
                 0. 01 4. 29 0. 00 2. 16 0. 00 0. 00 0. 00
           0.61
                              Lat. G(A)
                                         Lat. Misfit (%)
                   Lat. Gp (A)
     Fraction, Gp.
                                          -0. 36769
       0.57
                   3. 65660
                              3. 67010
                                         Solv (C)
                   Sol1 (C)
                              SoL2 (C)
                                                    Window (C)
      Liq(C)
                                                     44. 4
                              1345. 9
                                         1301. 4
                   1390. 2
      1409. 5
                                         R. A (%)
                              EI. (%)
                                                    Creep life(h)
      S1 (900. C)
                   Density
                                                    503. 1+/-85. 9
                              20.75
                                         30. 53
                    9. 012
    1. 442 (1. 251)
ALLOY TMS-138 *** Phase & Properties Calculation (at 900. C/ 392. OMPa ***PGM*
                                    W
                                          ΑI
                                                     Nb
                  Co
                        Cr
                              Мо
                                               Τi
            Νi
                             2. 94 5. 88 5. 88
                                               0.00
                                                     0.00
     (WT%) 63.60 5.88
                       2. 94
                                               0.00
                                                     0.00
     (AT%) 67. 74 6. 24
                       3. 54 1. 92 2. 00 13. 62
           69. 25 4. 08 1. 84 1. 14 1. 84 17. 91
                                                0.00
                                                     0.00
     GP
                                   2. 33
                                         4. 52
                                                0.00
                                                     0.00
           64. 54 10. 83
                       7. 14
                             3. 57
      G
                                                Pd
             Ta
                   Hf
                        Re
                              ۱r
                                     Ru
                                          Rh
                                                      Pt
                                   2.00 0.00
                                                0.00
                                                     0.00
            5. 88
                       4. 90
                             0.00
     (WT%)
                  0. 10
            2. 03
                  0. 04 1. 65 0. 00
                                   1. 24
                                         0.00
                                                0.00
                                                     0.00
     (AT%)
                                         0.00
                                                0.00
                                                      0.00
            2. 70 0. 05 0. 40
                              0.00
                                   0. 80
      GP
                  0. 01 4. 29
                              0.00 2.16
                                         0.00 0.00 0.00
            0. 61
                                          Lat. Misfit (%)
                    Lat. Gp (A)
                              Lat. G(A)
      Fraction. Gp
                    3. 64031
                               3. 65121
                                          -0. 29827
        0. 68
                                          Solv (C)
                                                     Window (C)
       Lia(C)
                    So 11 (C)
                               SoL2 (C)
                               1345. 9
                                          1301. 4
                                                      44. 4
                    1390. 2
       1409. 5
                               E1. (%)
                                          R. A (%)
                                                     Creep life(h)
       S1 (900. C)
                    Density
                               22. 39
                                          22. 45
                                                    1015. 5+/-313. 6
                     9. 012
     1. 442 (1. 251)
```

Fig. 6

